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Remarks

The Office Action dated July 16, 2004 has been received and reviewed. The pending claims are claims 6-30. Reconsideration and withdrawal of the rejections are respectfully requested.

Further, Applicants incorporate by reference the arguments made in the Amendment and Response under 37 C.F.R. § 1.111 dated April 19, 2004.

The 35 U.S.C. § 103(a) Rejections

Claims 6-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Arends et al. (U.S. Patent No. 5,360,659) in view of Oi et al. (U.S. Patent No. 5,804,102), Isoda (U.S. Patent No. 3,928,760), and Kloczek et al. (U.S. Patent No. 6,160,661).

Applicants traverse this rejection and submit that claims 6-10 are not *prima facie* obvious in view of the cited references for at least the following reasons. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations. See M.P.E.P. § 2143.

Claims 6-10 are not *prima facie* obvious because the combination of Arends et al., Oi et al., Isoda, and Kloczek et al. does not teach all of the elements of such claims. For example, independent claim 6 recites an optical filter system that includes an optical filter. The optical filter in turn includes a dielectric reflective layer that is curved.

In contrast to claim 6, the combination of cited references does not teach an optical filter that includes a curved dielectric reflective layer. As admitted by the Examiner, Arends et al. does not teach a curved dielectric reflective layer. The Examiner, however, alleges that Kloczek et al. teaches curved multilayer optical filters. Applicants traverse this allegation and submit that Kloczek et al. does not teach optical filters at all, especially curved optical filters.

For example, Kloczek et al. teaches an electro-optic system 10 that includes an infrared sensor 12 and a processing unit 14 protected by an infrared transmissive window 16. See Kloczek

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et al., Abstract. The window 16 includes a protective layer 22 of gallium phosphide that protects a substrate layer 18. *Id.* The window 16 also includes an inwardly formed anti-reflective layer 20 formed on the substrate 18 and an outwardly formed anti-reflective layer 26 that is formed on the protective layer 22. *Id.* The anti-reflective layer 26 may be formed of alternating layers of silicon and amorphous carbon. *Id.* at column 4, lines 7-9. The alternating layers of layer 26 "provide for the necessary anti-reflective effects as well as providing for additional wear resistance for the window 16." *Id.* at column 4, lines 10-13.

A "filter" is defined as "a device used to attenuate particular wavelength frequencies while passing others with relatively no change." See Photonics Dictionary (<<http://www.photonics.com/dictionary>>, accessed April 19, 2004). Klocek et al. does not teach that the antireflective layers 20 and 26 and/or the protective layer 22 attenuate particular wavelength frequencies. In other words, one skilled in the art would not consider any of the layers taught by Klocek et al. to include an optical filter or filters.

The additions of Oi et al. and Isoda do nothing to cure this deficiency already present in Arends et al. and Klocek et al. Therefore, the cited references, either alone or in combination, do not teach an optical filter that includes a curved dielectric reflective layer.

Even if the combination of cited references does teach all of the elements of independent claim 6, Applicants submit that there is no suggestion or motivation to combine the teachings of Arends et al. with those of Oi et al., Isoda, and Klocek et al. to produce the invention as claimed in claim 6. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See M.P.E.P. § 2143.01.

For example, Arends et al. teaches a two-component infrared reflecting film that includes alternating layers of first and second diverse polymeric materials. See, Arends et al., Abstract. Arends et al. does not teach or suggest an optical filter that includes a curved dielectric reflective layer. In contrast to Arends et al., Klocek et al. teaches an infrared sensor and a processing unit protected by a protective infrared transmissive window. See Klocek et al., Abstract. Apparently, Klocek et al. does not filter any particular wavelengths of light from reaching the infrared sensor.

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Instead, all of the light incident on the transmissive window passes through the window to the sensor. In other words, Klocek et al. does not teach an optical filter that includes a curved dielectric reflective layer.

Further, the sections of Oi et al. and Isoda that are relied upon by the Examiner do not teach or suggest a curved optical filter. Absent some motivation to combine the teachings of Arends et al. with those of Oi et al., Isoda, and Klocek et al., the required burden for a case of *prima facie* obviousness has not been met.

In addition, independent claim 6 is not *prima facie* obvious because one skilled in the art would not possess a reasonable expectation of success when combining the teachings of the cited references to produce the present invention as claimed in claim 6. For example, the Examiner alleges that one skilled in the art would be motivated to "use the IR reflective filter of Arends et al. as a curved protective shield for an IR sensor, as taught by Klocek et al., since a curved-shaped filter provides a greater flexibility in covering the most possible sensor area." Applicants traverse this alleged motivation.

One skilled in the art would not reasonably expect the IR filter taught by Arends et al. to work as a protective shield for the sensor taught by Klocek et al. because neither Arends et al. nor Klocek et al. teach that such filters would provide adequate protection for the device taught by Klocek et al. The devices taught by Klocek et al. are designed to withstand environmental degradation that may be exacerbated if the device is on a high speed platform like a plane or a missile as is common in military applications. See Klocek et al., column 1, lines 40-43. To that end, Klocek et al. teaches an anti-reflective layer 26 on the outermost surface of the window 16 that provides for additional wear resistance. *Id.* at column 4, lines 6-13. There is no teaching or suggestion in either Klocek et al. or Arends et al. that the filters of Arends et al. would withstand such environmental degradation.

Further, there is no suggestion or motivation to modify the teachings of Klocek et al. with those of Arends et al. as suggested by the Examiner because such modification would render the infrared transmissive protective window of Klocek et al. unsatisfactory for its intended purpose. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984). For example, Arends et al. teaches a

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preferred embodiment of a film that transmits at least 50% visible light between about 380-770 nm and reflects at least 50% of infrared light between about 770-2000 nm. In contrast to Arends et al., Kloczek et al. teaches an infrared transmissive protective window that offers broad infrared transmission over the 500 to 12000 nm region. See Kloczek et al., col. 2, lines 31-32. Kloczek et al. teaches that the described window 16 provides "protection of infrared sensor 12 without interfering with the transmission of infrared radiation through the window 16." Kloczek et al., column 4, lines 18-20. Using the IR reflective filter taught by Arends et al. "as a curved protective shield" for the IR sensor of Kloczek et al. as is suggested by the Examiner would block at least 50% of the infrared light between about 770-2000 nm. This would render the protective window taught by Kloczek et al. unfit for its intended purpose of offering broad infrared transmission over the 500 to 12000 nm region.

Claims 7-10, which depend from independent claim 6, are not *prima facie* obvious for the same reasons as presented above for claim 6. In addition, each of claims 7-10 recited additional elements that further support patentability when combined with independent claim 6.

For at least the above reasons, Applicants submit that claims 6-10 are patentable over the cited references. Reconsideration and withdrawal of this rejection are, therefore, respectfully requested.

Claims 11-19 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Arends et al. in view of Ouderkirk et al. (U.S. Patent No. 6,565,982) in view of Lechter (U.S. Patent No. 5,101,139) and Okamura et al. (U.S. Patent No. 6,104,530).

Applicants traverse this rejection and submit that claims 11-19 are not *prima facie* obvious in view of the cited references because such references, either alone or in combination, do not teach all of the elements of claims 11-19. For example, as admitted by the Examiner, Arends et al. does not teach a metallic mesh coated on a surface of a dielectric reflective film. The Examiner cites Ouderkirk et al. for teaching such a metallic mesh element. However, Applicants submit that Ouderkirk et al. qualifies for the 35 U.S.C. § 103(c) exception and, therefore, cannot be used to preclude patentability under 35 U.S.C. § 103(a). Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section

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where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. In this case, if Ouderkirk et al. is prior art to the present application, then it only qualifies as such prior art under sections (e), (f), or (g) of § 102. Applicants submit that, at the time the claimed invention was made, the claimed invention and the subject matter of Ouderkirk et al were owned by or subject to an obligation to assign to 3M Innovative Properties Company. Therefore, because of 35 U.S.C. § 103(c), Ouderkirk et al. cannot preclude patentability under 35 U.S.C. § 103.

The additions of Lechter and Okamura et al. do nothing to cure the deficiencies already present in Arends et al.

For at least the above reasons, Applicants submit that claims 11-19 are patentable over the combination of Arends et al. in view of Ouderkirk et al., Lechter, and Okamura et al. Reconsideration and withdrawal of this rejection are, therefore, respectfully requested.

Claims 20-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Arends et al. in view of Ouderkirk et al., Lechter, Okamura et al., and Oi et al.

Applicants traverse this rejection and submit that claims 20-27 are not *prima facie* obvious in view of the cited references because such references, either alone or in combination, do not teach all of the elements of claims 20-27. For example, as stated above in regard to the 35 U.S.C. § 103(a) rejection of claims 11-19, Arends et al. does not teach a metallic mesh coated on a surface of a dielectric reflective film. As is also stated above, under 35 U.S.C. § 103(c), Ouderkirk et al. cannot preclude patentability of the claimed invention. The additions of Lechter, Okamura et al., and Oi et al. do nothing to cure the deficiencies already present in Arends et al.

For at least the above reasons, Applicants submit that claims 20-27 are patentable over the combination of Arends et al., Ouderkirk et al., Lechter, Okamura et al., and Oi et al. Reconsideration and withdrawal of this rejection are, therefore, respectfully requested.

Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Ouderkirk et al. in view of Oi et al. and Isoda and Kloczek et al.

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Applicants traverse this rejection and submit that claim 28 is not *prima facie* obvious in view of the cited references because such references do not teach all of the elements of claim 28. For example, as stated above, under 35 U.S.C. § 103(c) Ouderkirk et al. cannot preclude patentability of the claimed invention. Further, applicants submit that the combination of Oi et al., Isoda, and Klocek et al. does not teach all of claim 28. For example, Oi et al., Isoda, and Klocek et al., either alone or in combination, do not teach an optical filter having a dielectric reflective layer that includes at least one polymer that is birefringent as is recited in claim 28.

For at least the above reasons, Applicants submit that claim 28 is patentable over the cited references. Reconsideration and withdrawal of this rejection are, therefore, respectfully requested.

Claim 29 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Ouderkirk et al. in view of Lechter and Okamura et al.

Applicants traverse this rejection and submit that claim 29 is not *prima facie* obvious in view of the cited references because such references do not teach all of the elements of claim 29. For example, as stated above, under 35 U.S.C. § 103(c), Ouderkirk et al. cannot preclude patentability of the claimed invention. Further, the combination of Lechter and Okamura et al. without Ouderkirk et al. does not teach all of the elements of claim 29. For example, the combination of Lechter and Okamura et al. does not teach an optical filter having a dielectric reflective layer with at least one birefringent polymer as is recited in claim 29.

For at least the above reasons, Applicants submit that claim 29 is patentable over the cited references. Reconsideration and withdrawal of this rejection are, therefore, respectfully requested.

Claim 30 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Ouderkirk et al. in view of Lechter, Okamura et al., and Oi et al.

Applicants traverse this rejection and submit that claim 30 is not *prima facie* obvious in view of the cited references because such references do not teach all of the elements of claim 30. For example, as stated above, under 35 U.S.C. § 103(c), Ouderkirk et al. cannot preclude patentability of the claimed invention. Further, the combination of Lechter, Okamura et al., and

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Oi et al. without Ouderkirk et al. does not teach all of the elements of claim 30. For example, such references do not teach an article having a dielectric reflective layer that includes at least one birefringent polymer as is recited in claim 30.

For at least the above reasons, Applicants submit that claim 30 is patentable in view of the cited references. Reconsideration and withdrawal of this rejection are, therefore, respectfully requested.

Summary

It is respectfully submitted that the pending claims are in condition for allowance. Reconsideration and withdrawal of all rejections are respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,

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Date

By: 

Jay R. Bralle, Reg. No.: 52,131
Telephone No.: (651) 733-6750

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833